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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Appellants: Carlo Amalfitano and Kevin L. Farley
Application No.: 09/773,255 Group Art Unit: 2686
Filed: January 31, 2001 Examiner: Willie J Daniel, Jr.
Confirmation No.: 4337

For:

QUEUING FAR/FAR SERVICE REQUESTS IN WIRELESS
NETWORK



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APPEAL BRIEF

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Sir:

This Appeal Brief is submitted pursuant to the Notice of Appeal received in the U.S. Patent and Trademark Office on January 24, 2005, and in support of the appeal from the final rejection set forth in the Office Action mailed on October 15, 2004. The fee for filing a brief in support of an appeal is enclosed.

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I. REAL PARTY IN INTEREST

The real party in interest is IPR Licensing, Inc., 300 Delaware Avenue, Suite 527, Wilmington, Delaware 19801. On information and belief:

- a) IPR Licensing, Inc. was assigned the entire right, title and interest in the subject application, by virtue of an Assignment from InterDigital Patent Corporation, 300 Delaware Avenue, Suite 527, Wilmington, Delaware 19801 recorded on March 10, 2004 at Reel 014420, Frames 0435-0447;
- b) InterDigital Patent Corporation was, in turn, assigned the entire right, title and interest in the subject application, by virtue of an Assignment from InterDigital Acquisition Corp., 300 Delaware Avenue, Suite 527, Wilmington, Delaware 19801 recorded on February 19, 2004 at Reel 014351, Frames 0777-0785;
- c) InterDigital Acquisition Corp. was, in turn, assigned the entire right, title and interest in the subject application, by virtue of an Assignment from Tantivy Communications, Inc., 2200 Front Street, Suite 300, Melbourne, Florida 32901 recorded on February 26, 2004 at Reel 015000, Frames 0141-0152; and
- d) Tantivy Communications, Inc. was, in turn, assigned the entire right, title and interest in the subject application, by virtue of an Assignment from the inventors recorded on May 2, 2001 at Reel 011760, Frames 0240-0242.

As the attached report (Exhibit A) from the U.S. Patent and Trademark Office's Patent Application Information and Retrieval (PAIR) system, there may be other interests, such as security interests that may or may not have been released.

II. RELATED APPEALS AND INTERFERENCES

Applicants, the undersigned Attorney, Assignee are not aware of any related appeals or interferences which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

III. STATUS OF CLAIMS

Claims 3, 4, and 8-17 remain in the application and are being appealed. A copy of the claims appears in the Claims Appendix of this Brief. Claims 1, 2 and 5 - 7 were cancelled in the Amendment filed on January 5, 2004. Claims 3, 4 and 8 were amended in the Amendment filed on January 5, 2004. Claims 9 - 17 were added in the Amendment filed on January 5, 2004.

IV. STATUS OF AMENDMENTS

No Amendments have been filed subsequent to the Final Rejection. However, Applicant conducted a telephone interview with Examiners Daniel and Banks-Harold on January 31, 2005. During the interview, Applicant's counsel explained in detail why the present invention was different from the prior art and that there was no teaching or suggestion of the claimed "transmitting or receiving a report of an expected time of high and/or low interference communication from an adjacent base station." The Examiner respectfully disagreed.

V. SUMMARY OF CLAIMED SUBJECT MATTER

A. Claim 3

The present invention coordinates the servicing of mobile wireless devices located far away from a cell base station. These units, typically located at or near a cell boundary, must operate at relatively high transmit signal power. As such, these units are likely to cause interference with units operating near the cell boundary of an adjacent cell. In its simplest form, this coordination may take place by recognizing a situation where two subscriber units are each located at the edge of their respective adjacent cells, operating at high power levels. The base stations servicing the two cells then cooperate to permit only one unit or the other unit to be active at any given instant in time. This does not pose a problem for data transmission since the transmission of data can typically be delayed and/or time slotted without a perceived degradation in performance.¹

¹ See Specification, page 2, line 26 through page 3, line 6.

The invention can also provide graded levels of service based upon measured power levels. This has the effect of coordinating the transmission of an aggregate expected high interference time slot in one cell with the transmission of an aggregate expected lower interference transmission time slot in an adjacent cell.²

Coordinating the time slots for high interference transmissions in adjacent cells may occur in several ways. In one claimed embodiment, an operating base station determines the existence of communications in adjacent cells. Next, the operating base station receives a report of an expected time of low interference communications from an adjacent base station and schedules transmission of high interference communications associated with a subscriber unit in the cell associated with the operating base station at the expected time of low interference communications in the adjacent cell.³

B. Claim 8

The present invention further discloses the operating base station receives a report of an expected time of high and low interference communications from an adjacent base station and schedules transmission of high interference communications associated with a subscriber unit in the cell associated with the operating base station at the expected time of low interference communications in the adjacent cell.⁴

C. Claim 13

The present invention discloses at least two cells each have a respective base station for coordinating communication with remote units located within its respective cell. A second base station transmits via a communications link to the first base station, a report of an expected time of high and low interference communications from the second base station. Based on the report, through a resource allocator, the first base station schedules transmission of high interference communications associated with a subscriber unit in the cell associated with the first base station at the expected time of low interference communications in the second base station.⁵

² See Specification, page 3, lines 7-10.

³ See Specification, page 3, lines 11-16 and Amended Claim 1.

⁴ See Specification, page 3, lines 17-20 and Amended Claim 8.

⁵ See Specification, page 3, lines 21-27 and New Claim 13.

VI. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

As a concise statement of the grounds for appeal, Applicants state that Claims 3, 4, and 8-17 were rejected under 35 U.S.C. 102(b), with the Examiner finding the claims to be anticipated by Dent (U.S. Patent No. 5,894,473).

VII. ARGUMENT

A. The Rejection

Claims 3-4 and 8-17 have been rejected under 35 U.S.C. §102(b), with the Examiner finding the claims to be anticipated by Dent (U.S. Patent No. 5,894,473).

B. The Dent Patent

In brief, we agree that Dent is concerned with coordinating the transmission of cellular signals during allocated time slots. However, Dent allocates time slots using what Dent himself calls well known “re-use partitioning” techniques.⁶ That is, the time slots used for allocation of the power signals are predetermined and scheduled to be transmitted at predetermined known times.

For example, high power signals are allocated to frequency 1 at base station 1, medium power signals to frequency 1 at base station 2, and low power signals to frequency 1 at base station 3, where the three base stations are adjacent and form the vertices of a triangle. The allocation of power levels is then cyclically permuted at two other frequencies, with base station 2 using frequency 2 for high power signals, base station 3 using it for medium power signals, and base station 1 using it for low power signals, and so on for frequency 3. In this way, the same frequency is not used for high power signals in two adjacent cells.⁷

Dent is further concerned with mobile unit handover techniques. For example, a mobile unit includes “absolute information” (which we interpret to mean measured signal power) concerning the cell with which it is associated, along with “relative information” concerning other

⁶ See Dent, Col. 16, lines 57-58.

⁷ See Dent, Col. 16, lines 46-57.

cells proximate (adjacent) to the cell in the mobile unit is located.⁸ Using this information, the mobile unit periodically scans the adjacent cells while monitoring its primary control channel to determine if there is a more suitable candidate cell (a handover).⁹

C. Claims 3-4 and 8-17 are Novel

Anticipation under 35 U.S.C. § 102 requires identical disclosure of the claimed invention in the prior art.¹⁰ “Every element of the claimed invention must be literally present, arranged as in the claim.”¹¹

Dent does not teach, suggest, or otherwise make obvious transmitting or receiving a report of an expected time of high and/or low interference communication from an adjacent base station.¹² This feature is recited plainly in all of Applicant’s independent claims (Claims 3, 8 and 13).

The Applicants respectfully disagree with the Examiner’s conclusion of various sections of Dent as supposedly teaching this transmission of the report. In none of those places, nor anywhere else, does Dent mention or suggest the base stations sending such a report. For example, the Examiner points to three specific areas of Dent namely a) column 8, lines 29-37 ; b) column 16, lines 11-15 and 32-64; and c) column 29, line 39 - column 21, line 6. These areas of Dent are concerned with a) “subtractive demodulation” techniques¹³; b) “re-use partitioning”

⁸ See Dent, Col. 20, line 66 through Col. 21, line 4.

⁹ See Dent, Col. 21, lines 4-6.

¹⁰ See *Gechter v. Davidson*, 116 F.3d 1454, 1457, 43 USPQ2d 1030, 1032 (Fed. Cir. 1997) (“Under 35 U.S.C. § 102, every limitation of a claim must identically appear in a single prior art reference for it to anticipate the claim.”).

¹¹ *Richardson v. Suzuki Motor Co., Ltd.*, 868 F.2d 1226, 1236, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989).

¹² The Examiner once was of the opinion that the applied references (which include Dent) “fail to disclose or render obvious where the operating base station receives a report of an expected time of high and low interference transmissions from an adjacent base station”. See Office Action dated October 3, 2003, page 4, lines 4-7.

¹³ See Dent, Col. 7, line 56 - Col. 10, line 64.

techniques¹⁴; and c) “handover” techniques¹⁵ and neither area alone or collectively teach, suggest or otherwise make obvious any type of report being sent or received from an adjacent base station.

First, subtractive demodulation is concerned with decoding a composite signal of multiple mobile stations (units) in a cell. Dent enhances this technique by decoding the composite signal based on signal strength.¹⁶ That is, the strongest signal is correlated and removed first, the next strongest signal is correlated and removed next, and so on until the weakest signal is correlated and removed.¹⁷ The strength of the signals making up the composite signal can be detected by a signal processor, a mobile switching station, a base station, or can be predicted based upon historical models of signal strength.¹⁸ Detecting or predicting the strength of a signal and decoding the signal based on its signal strength is not teaching or suggesting a report as claimed in the present invention. Moreover, there is no teaching or suggestion of an exchange of any statistics about the expected high and/or low interference transmission periods from one adjacent base station to another adjacent base stations.

Second, reuse partitioning is concerned with allocation of time slots for high and low power transmission at times that are predetermined, scheduled, and then cyclically permuted. Moreover, Dent specifically teaches away from transmitting a report of high and/or low transmission times from one station to another, by teaching “re-use partitioning” techniques.¹⁹ As stated above, scheduling of high and lower power transmission times in Dent are predetermined, scheduled, and cyclically permuted. Receiving a report of expected high and/or low transmission periods is patently different from a predetermined schedule as in Dent.

Lastly, the relative information contained in a “handover” technique is not a report about expected high and/or low interference transmission period as is claimed in the present invention.

¹⁴ See Dent, Col. 16, lines 2-64.

¹⁵ See Dent, Col. 20, line 39 - Col. 21, line 6.

¹⁶ See Dent, Col. 8, lines 3-5.

¹⁷ See Dent, Col. 8, lines 5-6.

¹⁸ See Dent, Col. 8, lines 29-37.

¹⁹ See Dent, Col. 16, lines 2-58.

Rather, the information in Dent is used by a single mobile station (unit) to determine when to switch to another base station, e.g., "to determine if there is a more suitable candidate."²⁰

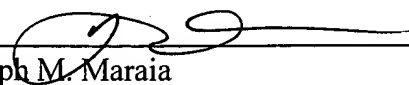
Dent fails to teach, suggestions, or otherwise make obvious "a report of an expected time of high and/or low interference communications from an adjacent base station." Thus, Dent does not provide an identical disclosure of each feature of the claimed invention. Every claim either recites this limitation, or contains the limitation through dependency. Therefore, Appellants respectfully submit that the Examiner has failed to make out a prima facie case under 35 U.S.C. § 102.

Appellants respectfully submit that all the remaining claims in the application are in condition for allowance based on there dependency on independent Claims 3, 8, and 13. The cited references fail to disclose all claim limitations as required for a rejection under 35 U.S.C. § 102(b).

The grounds for rejection under 35 U.S.C. § 102(b) should be reversed.

Respectfully submitted,

HAMILTON, BROOK, SMITH & REYNOLDS, P.C.

By 
Joseph M. Maraia
Registration No. 55,926
Telephone: (978) 341-0036
Facsimile: (978) 341-0136

Concord, MA 01742-9133

Date: 10/20/05

²⁰ See Dent, Col. 21, lines 4-6.

VIII. CLAIMS APPENDIX

3. In a wireless communication system in which remote subscriber units are located in cells, and at least two cells are located adjacent one another, each cell having a base station unit that coordinates communication with remote units located within its respective cell, a method comprising the steps of:
 - in an operating base station, determining the existence of communications occurring in adjacent cells;
 - receiving, by the operating base station, a report of an expected time of low interference communications from an adjacent base station; and
 - scheduling transmission of high interference communications associated with a subscriber unit in the cell associated with the operating base station at the expected time of low interference communications in the adjacent cell.
4. A method as in claim 3 wherein the report is a report of a service status message from the adjacent base station and is relayed from a subscriber unit located in the cell served by the serving base station.
8. In a wireless communication system in which remote subscriber units are located in cells, and at least two cells are located adjacent one another, each cell having a base station unit that coordinates communication with remote units located within its respective cell, a method comprising the steps of:
 - in an operating base station, determining the existence of communications occurring in adjacent cells;
 - receiving, by the operating base station, a report of an expected time of high and low interference communications from an adjacent base station; and
 - scheduling transmission of high interference communications associated with a subscriber unit in the cell associated with the operating base station at the expected time of low interference communications in the adjacent cell.

9. A method as claimed in claim 3, wherein transmission scheduling further comprises:
 - assigning specific time slots to specific subscriber units; and
 - coordinating allocation of a time slot to a high interference communication in one base station with the allocation of a time slot for a low interference communication in an adjacent base station.
10. A method as claimed in claim 3, wherein the coordinated communications are reverse link signals traveling from the subscriber units towards the base stations.
11. A method as claimed in claim 3, wherein the coordinated communications are forward link signals traveling from the base station towards the subscriber units.
12. A method as claimed in claim 8, further comprising:
 - scheduling transmission of low interference communications associated with a subscriber unit in the cell associated with the operating base station at the expected time of high interference transmissions from the adjacent base station.
13. A wireless communication system comprising:
 - at least two cells located adjacent to one another, each cell having a base station unit that coordinates communication with remote units located within its respective cell;
 - a communications link for transmitting, to a first base station from a second base station, a report of an expected time of high and low interference communications from an adjacent base station; and
 - a resource allocator at the first base station for scheduling transmission of high interference communications associated with a subscriber unit in the cell associated with the first base station at the expected time of low interference communications in the adjacent cell.
14. The wireless communication system of claim 13, wherein the communication link is a wire line.

15. The wireless communication system of claim 13, wherein the communication link further comprises a resource allocation station.
16. The wireless communication system of claim 13, wherein the coordinated communications are reverse link signals traveling from the subscriber units towards the first base station.
17. The wireless communications system of claim 13, wherein the coordinated communications are forward link signals traveling from the first base station towards the subscriber units.

IX. EVIDENCE APPENDIX

NONE

X. RELATED PROCEEDINGS APPENDIX

NONE

HAMILTON
BROOK
SMITH &
REYNOLDS, P.C.

PATENTS, TRADEMARKS
COPYRIGHTS & LITIGATION

530 VIRGINIA ROAD
P.O. BOX 9133
CONCORD, MA 01742-9133
TEL (978) 341-0036
FAX (978) 341-0136
www.hbsr.com

MUNROE H. HAMILTON
(1906-1984)

DAVID E. BROOK
JAMES M. SMITH
LEO R. REYNOLDS
JOHN L. DUPRE
DAVID J. BRODY
MARY LOU WAKIMURA
ALICE O. CARROLL
N. SCOTT PIERCE
SUSAN G. L. GLOVSKY
DOREEN M. HOGLE
ROBERT T. CONWAY
RODNEY D. JOHNSON
DAVID J. THIBODEAU, JR.
ANNE J. COLLINS
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STEVEN G. DAVIS
DEIRDRE E. SANDERS
BRIAN T. MORIARTY

PAUL G. ALLOWAY
MICHAEL J. BADZINSKI
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SETH M. CANNON
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CAROL A. EGNER
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KEITH J. WOOD
MICHAEL M. YAMAUCHI

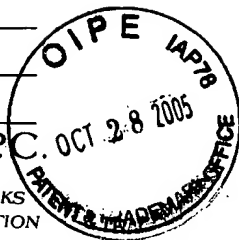
OF COUNSEL
ELIZABETH W. MATA
DARRELL L. WONG

PATENT AGENTS
SUSAN M. ABELLEIRA
ALEXANDER AKHIEZER
ERIC M. BALICKY
VIVIEN J. TANNOCH-MAGIN
PAMELA A. TORPEY
ROBERT H. UNDERWOOD

TECHNOLOGY SPECIALISTS
KAMILAH ALEXANDER
THOMAS J. ARRIA
MARIA CEDRONI
KRISTIN A. CONNARN
MICHAEL GOTTSSELIG
JOHN T. HURLEY
SUSAN C. KELLY
SARAH J. RODRIGUEZ
BOOYONG SHIM LIM

MICHAEL KEWESHAN
ADMINISTRATIVE DIRECTOR

BARBARA J. FORGUE
ADMINISTRATOR OF
PATENT AND
TRADEMARK PRACTICE



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October 26, 2005

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Re: Appellant(s): Carlo Amalfitano and Kevin L. Farley
Application No.: 09/773,255 Filed: January 31, 2001
Confirmation No.: 4337
Title: QUEUING FAR/FAR SERVICE REQUESTS
IN WIRELESS NETWORK
Docket No.: 2479.1025-000

Sir:

Applicants' Attorney acknowledges receipt of the Notification of Non-Compliant Appeal Brief which was mailed by the Examiner on September 30, 2005.

Applicants' Attorney is submitting herewith a complete new Brief in compliance with 37 C.F.R. 41.37.

Applicants' Attorney thanks the Primary Examiner, Mr. Appiah, for pointing out the areas of non-compliance which we believe have been corrected and are now fully compliant, and the Brief is submitted herewith.

Please note that the fee for filing the Appeal Brief and a request for a two-month extension of time were submitted in the form of a check on May 24, 2005, in the total amount of \$950.

Please charge any deficiency or credit any overpayment in the fees that may be due in this matter to Deposit Account No. 08-0380. A copy of this letter is enclosed for accounting purposes.

Respectfully submitted,

HAMILTON, BROOK, SMITH & REYNOLDS, P.C.

By


Joseph M. Maraia

Registration No.: 55,926

Telephone: (978) 341-0036

Facsimile: (978) 341-0136

Concord, MA 01742-9133

Dated: 10/26/08